WP14-235

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
ENGINEERS FREQUENCY ADVISORY COMMITTEE, LLC	)	PS Docket No.
	)	WT Docket No.
	)	
Request for Certification as Frequency Advisory Committee for the Part 90 Public Safety and Business/Industrial Radio Frequencies	)	

To: The Commission

REQUEST FOR CERTIFICATION

Respectfully submitted,

ENGINEERS FREQUENCY ADVISORY COMMITTEE, LLC

By: Alan S. Tilles, Esquire

Its Attorney

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Date: November 4, 2014

TABLE OF CONTENTS

SUMMARY

The Engineers Frequency Advisory Committee, LLC ("EFAC"), through counsel and pursuant to the Commission's Report and Order in PR Docket No. 82-737 ("*Order*"), hereby respectfully requests that it be designated by the Commission as a certified Frequency Advisory Committee for the purposes of performing frequency coordination for the Part 90 Public Safety and Business/Industrial Radio Service Pools. In support thereof, the following is shown:

EFAC is a newly formed company designed to provide Part 90 frequency coordination for those customers of EFAC's members who require high level engineering services to implement or expand their land mobile radio systems. EFAC was established to better merge cutting edge engineering techniques with the frequency coordination process, creating a more efficient, and therefore more cost effective and timely application process for private land mobile licensees.

EFAC's members are Tusa Consulting Services ("Tusa"), Blue Wing Services (Blue Wing) and Shulman Rogers Gandal Pordy & Ecker, P.A. ("Shulman Rogers"). Each entity has a long history in providing services for Part 90 Public Safety and Business/Industrial land mobile radio entities, and each entity has been intimately involved with frequency coordination services. As shown below, EFAC represents the perfect combination of Part 90 frequency selection knowledge and field experience, and EFAC meets all of the Commission's criteria for certification as a Frequency Advisory Committee.

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I. BACKGROUND

A. The Engineers Frequency Advisory Committee, LLC

The Engineers Frequency Advisory Committee, LLC is a newly formed company designed to provide Part 90 frequency coordination for those customers of EFAC's members who require high level engineering services to implement or expand their land mobile radio systems. EFAC was established to better merge cutting edge engineering techniques with the frequency coordination process, creating a more efficient, and therefore more cost effective and timely application process for private land mobile licensees.

The Part 90 frequency selection process requires a much higher level of sophistication, as compared to the spectrum environment that existed when the Commission adopted its Report & Order in PR Docket No. 83-737.[1] At that time, most Part 90 radio services featured shared frequencies, with virtually all users utilizing 25 kHz bandwidth analog systems. Trunking technology was just beginning to be introduced at 800 MHz, and digital technology was years away.

Now, Part 90 radio services feature a variety of trunking technologies in all bands, a variety analog and digital technologies share the same frequencies, and system bandwidth vary from 6.25 kHz to 25 kHz on the same, and adjacent, channels. The same frequency selection techniques used in 1986 (selecting the "best of the worst" shared channels) have yielded to increasing complicated considerations of bandwidth overlap, exclusivity, and transmission technologies.

As discussed herein, the members of EFAC have responded to these challenges by utilizing the latest engineering software and techniques, designing systems to maximize spectrum utilization and minimize interference. However, in designing more sophisticated systems, and performing high level channel availability reviews, usually utilizing the same licensing tools as existing frequency advisory committees, EFAC members must still have its clients go through a frequency coordination process with coordinators, which only confirm (for a significant fee) work already performed by EFAC's members. As a result, there is a significant delay in the licensing process for applicants, and a significant additional cost, without any benefit for the applicant or the licensing process.

Therefore, EFAC was created to address this inefficiency in the licensing process. EFAC customers will be able to reduce their time-to-licensing, and reduce costs, while at the same time

[1] *Report and Order*, PR Docket No. 73-737, 60 RR2d 41 (1986).

ensuring the highest quality of frequency selection and compliance with the Commission's Rules. EFAC is frequency coordination taken to the next level. Combining entities knowledgeable in coordination rules, the application process, land mobile engineering and field experience, EFAC represents the next generation of frequency selection.

EFAC's members are Tusa Consulting Services ("Tusa"), Blue Wing Services (Blue Wing) and Shulman Rogers Gandal Pordy & Ecker, P.A. ("Shulman Rogers"). Each entity has a long history in providing services for Part 90 Public Safety and Business/Industrial land mobile radio entities, and each entity has been intimately involved with frequency coordination services. As shown below, EFAC represents the perfect combination of Part 90 frequency selection knowledge and field experience, and EFAC meets all of the Commission's criteria for certification as a Frequency Advisory Committee.

1. Tusa Consulting Group, LLC

Tusa's heritage derives from the hostile offshore Gulf of Mexico environment where hardened communications networks are essential in the petrochemical industry. TCS adopted those proven techniques and successfully applied them to public-safety radio networks. Since 1992, Tusa has focused solely on the field of land mobile radio communications and shielding clients from the risks and challenges of new technology.

TCS personnel hold engineering degrees from the Nation's best colleges of engineering and business management. Others have decades of frontline field implementation and system maintenance experience, thereby knowing how to field new systems. TCS' expertise spans land-mobile radio design, infrastructure deployment, microwave transport and network integration, wireless broadband, interoperable solutions and navigating regulatory challenges.

TCS engineers and project managers have a wealth of experience analyzing, designing and implementing P25 networks from all vendors with a special emphasis on 700/800 P25 simulcast networks. TCS has advised and managed the end to end process for public safety customers of all sizes throughout the Southeast, the Midwest, the Eastern seaboard and the Gulf Coast states.

Tusa was one of the first consulting firms to embrace the Project 25 standards as a mechanism to create truly competitive procurements and deliver more value for government and public safety entities. Tusa is well versed in all Project 25 standards including Phase I FDMA, Phase II TDMA, the Inter RF Subsystem Interface (ISSI), the Console Subsystem Interface (CSSI), link layer authentication and other P25 interfaces and services.

Tusa personnel regularly attend training on the new developments in the P25 standards and research all vendor capabilities in reference to compliance to the standards. Tusa also attends and participates in vendor sponsored technology seminars to fully understand each vendor's Project 25 solution portfolio as well as the underlying architecture for each respective vendor platform (e.g. ASTRO 25, P25IP, Atlas 25, etc.).

When a change in technology occurs, there is the risk that performance can be degraded if technology is adopted incorrectly or if differences in fundamental operations have not been appropriately mitigated by design. Of course, the most noticeable difference users in the field identify with is changes in coverage performance and/or audio clarity. Tusa utilizes several propagation modeling tools in its investigation of potential coverage performance. Most of Tusa's work utilizes a variety of engineering tools accepted in the land mobile radio industry, including *ComSite Design, RAPTR* or *ComStudy*. *ComStudy* is the accepted tool for frequency application submittals as used by most regional frequency coordinators. Both *ComSite Design*

and *RAPTR* incorporate automated and manually-adjustable routines to optimize signal launch timing at tower sites, with the aim of controlling time delay interference within coverage overlap areas. Tusa also has the ability to conduct and analyze actual signal level measurements of portions or all of a client's radio system service area to allow for precise understanding of existing, delivered coverage.

2. Blue Wing Services

Blue Wing has been involved in both sides of numerous public safety and business/industrial systems: from the user side and the vendor side. This has allowed Blue Wing to understand the critical issues of the system design as well as the information that must be gathered to provide appropriate direction. Blue Wing team members have had the responsibilities of Project Manager, Project Director and Director of a number of public safety radio systems and projects. Consequently, our team members understand the process and management of ensuring successful public safety communications systems. In addition, Blue Wing has experience working in all areas of public safety including law enforcement, fire, EMS and emergency management.

Blue Wing has an extensive background in public safety communications. Blue Wing has consulted in various capacities in projects ranging in size from small municipal systems to statewide systems. Blue Wing Services takes a very pragmatic approach to systems design that focuses first on defining the operational needs, then on employing the technology that satisfies the operational requirement – "Operations Engineered."

Blue Wing believes its key advantage is its strong understanding of the current public safety and business/industrial technologies, applications and products available from public safety manufacturers. Blue Wing Services takes a very pragmatic approach to systems design

that focuses first on defining the operational needs and second on employing the technology that satisfies the operational requirement.

Blue Wing team members have significant public safety communications experience – local, county and state. Blue Wing possesses an excellent understanding of public safety communications systems and the technology that is currently deployed. Blue Wing has worked with, and is currently working with, public safety clients that operate a variety of radio systems utilizing various manufacturers and technologies. Blue Wing is frequently asked to recommend and evaluate communications solutions and, therefore, understands legacy technology and the latest product advancements and operational impacts. Because of our involvement in various processes including TIA Project 25 standards development, narrowbanding and digital connectivity, Blue Wing has a very good understanding of the future direction of public safety communications technology.

3. Shulman Rogers Gandal Pordy & Ecker, P.A.

Founded in 1972, Shulman Rogers Gandal Pordy & Ecker, P.A. ("Shulman Rogers") is located in and has its main office in Potomac, Maryland. Over the past forty years, the Firm has distinguished itself not only as one of the most respected law firms in Maryland, but also boasts attorneys with substantial national and international experience across a wide range of legal subjects. Today Shulman Rogers is staffed by over 95 attorneys, 30 legal assistants and 77 other support personnel organized into six general operating departments: telecommunications, corporate, trusts and estates, real estate, commercial litigation and contingent litigation. Each of these general departments contains several departments and practice areas.

Shulman Rogers has unequalled experience in communications law, and has played – and continues to play – a leadership role in bringing clarity to a wide range of issues now subject to a

great deal of discussion and debate within the industry. The efforts of Shulman Rogers, as well as its recognized expertise in communications law, have resulted in several changes in the FCC's rules.

Alan Tilles, head of the Shulman Rogers Telecommunications Department, has 30 years of experience in land mobile radio. In connection with his representation of municipalities and counties nationwide, Mr. Tilles has been at the forefront of efforts to build and expand robust and interconnected wireless communications networks so that first responders are able to communicate and to access critical information more effectively. Through this work, Mr. Tilles and his colleagues have become familiar with a broad range of communications contracts and ordinances, and understand well the various interests impacted by the build-out and growth of any communications network, including the construction of antennae on public and private property.

Mr. Tilles has successfully worked with major telecommunications players, including the FCC, NTIA, other federal and local agencies, and many industry leaders (equipment manufacturers, service providers, trade associations, etc.) on a number of initiatives. He has had a crucial role in developing creative and cutting-edge solutions for ensuring orderly and efficient wireless network access at a time when technology and demand have been evolving rapidly.

The "bread and butter" of the Firm's telecommunications work is in the public safety communications area. Whether representing over 200 entities in their 800 MHz rebanding negotiations, creating rules for VHF/UHF narrowbanding, or finding spectrum for critical public safety communications, the Firm helps agencies ensure that reliable communications are always available for our nation's first responders. In addition to those services previously mentioned,

the Firm has been retained by public safety entities to review Project 25 (P25) RFP responses, works to resolve interference issues and negotiates spectrum acquisition agreements.

Shulman Rogers prepares hundreds of applications each year for Part 90 Public Safety and Business/Industrial applicants. A casual search of the Commission's Universal Licensing System reveals the thousands of licenses for which the Firm serves as the contact. A Firm subsidiary also serves as the Agent for Service for numerous FCC commercial licenses. In addition, the Firm works on tower-related issues, including acquisitions, leases, zoning and structural issues. Other areas of telecommunications work include microwave, video relay service (translation services for deaf customers) and disability access issues.

Shulman Rogers' demonstrated knowledge of communications laws and regulations, as well as its success in negotiating and drafting numerous agreements to facilitate the building and operation of complex communications networks, has led to the Firm's selection by dozens of municipalities nationwide to represent them in their public safety licensing communications activities, including:

State of Alabama
State of Kansas
State of Colorado
State of Washington
Dallas/Fort Worth, Texas Airport Authority
City of Daphne, Alabama
City of Gadsden, Alabama
City of Mobile, Alabama
Mobile County, Alabama
City of Mesa, Arizona
Los Angeles Unified School District, California
Sacramento County, California
Los Angeles County, California
City of Gustine, California
City of Richmond, California
City of Roseville, California
City of Turlock, California
City of Walnut Creek, California
City of Denver, Colorado
City of Lakewood, Colorado
City of Wheat Ridge, Colorado
City of Arvada, Colorado
City of Westminster, Colorado
Town of Wethersfield, Connecticut
Greater Orlando Airport Authority, Florida
City of Clearwater, Florida
City of Tallahassee, Florida
Martin County, Florida
Monroe County, Florida
Orange County, Florida
Osceola County, Florida
Pasco County, Florida
Seminole County, Florida
Volusia County, Florida
Town of Medley, Florida
Athens-Clarke County, Georgia
Henry County, Georgia
City of Honolulu, Hawaii
Tazewell County, Illinois
Peoria County, Illinois
Northwest Central Dispatch System, Illinois
Village of Schaumburg, Illinois
Steuben County, Indiana
City of Anderson, Indiana
Douglas County, Kansas
Ellis County, Kansas
Ellsworth County, Kansas
Leavenworth County, Kansas
Lincoln County, Kansas
McPherson County, Kansas
Russell County, Kansas
Sedgwick County, Kansas
Shawnee County, Kansas
Sumner County, Kansas
Wabaunsee County, Kansas
Township of Galloway, New Jersey
Atlantic County, New Jersey
City of Ocean City, New Jersey
City of Camden, New Jersey
City of Cherry Hill, New Jersey
Auburn City, New York
Town of Poughkeepsie, New York
City of Sparks, Nevada
Washoe County, Nevada
Town of Cary, North Carolina
City of Dunn, North Carolina
City of Durham, North Carolina
Johnston County, North Carolina
Harnett County, North Carolina
Raleigh-Durham Airport Authority, North Carolina
City of Grand Forks, North Dakota
City of Columbus, Ohio
City of Dublin, Ohio
City of Grove City, Ohio
City of Springfield, Ohio
Fayette County, Ohio
Franklin County, Ohio
Clinton County, Ohio
Pickaway County, Ohio
Ottawa County, Ohio
Municipal Government of Bayamon, Puerto Rico

City of Apopka, Florida
City of Aventura, Florida
City of Clearwater, Florida
City of Maitland, Florida
City of Miramar, Florida
City of North Miami Beach, Florida
City of Orange City, Florida
City of Miami Springs, Florida
City of Miami Shores, Florida
Brevard County, Florida
Hillsborough County, Florida
Indian River County, Florida
Manatee County, Florida
Lake Quivira, Kansas
City of Paducah, Kentucky
City of Owensboro, Kentucky
City of Baton Rouge, Louisiana
Harrison County, Mississippi
Mississippi State University
City of Kansas City, Missouri
City of St. Louis, Missouri
St. Louis Bi-State Development Agency, Missouri
City of Lincoln, Nebraska
Egg Harbor Township, New Jersey
City of Brigantine, New Jersey
Municipal Government of Guaynabo, Puerto Rico
Spartanburg County, South Carolina
City of Chattanooga, Tennessee
City of Memphis, Tennessee
City of Oak Ridge, Tennessee
Port of Seattle, Washington
City of Chesapeake, Virginia
City of Newport News, Virginia
City of Suffolk, Virginia
Spotsylvania County, Virginia
Port of Seattle, Washington
Ozaukee County, Wisconsin

In addition to being a leader in educating municipalities on their FCC obligations, the Firm has also created specialized websites dedicated to narrowbanding (www.narrowbandinglaw.com) and 800 MHz rebanding (www.800mhzrebanding.com). The Firm has also been retained by the National Transit Institute to provide free all-day narrowbanding training for transit agencies nationwide.

The Firm has worked on several public safety interoperability projects, both with individual clients and on a national basis with Regional Planning Committees and APCO. The Firm's work includes assistance in the preparation of Requests for Proposals and evaluation of responses to such requests.

The qualifications of which Shulman Rogers brings to EFAC include the work of Alan Tilles in land mobile radio. Mr. Tilles is Chairman of the Firm's Telecommunications Department. His breadth of work includes representing PCIA, one of the FCC's certified Frequency Advisory Committees. On behalf of PCIA and other clients, Mr. Tilles has participated in virtually every FCC proceeding involving the private land mobile radio industry since 1984. In addition, he represents hundreds of municipalities (States, Counties and Cities), transit systems, Specialized Mobile Radio (SMR) operators, private system users (including major airlines and utilities), tower owners and radio manufacturers.

Mr. Tilles has represented entities in regulatory proceedings, licensing, leasing and telephone interconnection disputes, as well as business transactions. Presently, Mr. Tilles is

representing over 200 public safety licensees in the 800 MHz "rebanding" negotiations with Nextel, and he was part of the committee that drafted the so-called "Consensus Plan," the template for the FCC's decision in the matter. Mr. Tilles was actively involved in the FCC's "narrowbanding" rulemaking proceeding on behalf of a variety of users, as well the efforts of railroads to implement Positive Train Control ("PTC").

II. EFAC IS QUALIFIED TO BE A FREQUENCY ADVISORY COMMITTEE

EFAC's members are clearly qualified individually to provide frequency coordination services. However, through their joint operation, EFAC represents an eminently qualified entity, meeting every Commission criteria for certification at the highest level.

A. EFAC Is Representative Of Users Of Each Radio Service Pool

One of the Commission's criteria for selection as a Frequency Advisory Committee is being representative of the users of the radio service to be coordinated. Similar to the Request filed by ACD Telecom, LLC ("ACD") for certification, Tusa and Blue Wing have each been utilized by a variety of public safety and industrial/business licensees across the country to represent them in the land mobile radio process before the FCC in various formats. More importantly, however, literally hundreds of public safety and business/industrial Part 90 users, radio manufacturers and existing Frequency Advisory Committees have signed retainer letters with Shulman Rogers for the Firm to represent these licensees and entities before the Commission and other Frequency Advisory Committees. The Commission's records are replete with hundreds of documents submitted by Shulman Rogers in a variety of Part 90 proceedings on behalf of these licensees.[2]

[2] *See*, for example, the following sets of Comments filed in various FCC proceedings: Icom America, Inc. in PS Docket No. 13-87; State of Washington in WT Docket No. 02-55 (February 26, 2013); Delta Airlines, Inc. in WT Docket No. 99-87 (February 10, 2012); Metropolitan Transportation Authority in WT Docket No. 10-119 (July 22,

This work represents the definition of "representative" in its purest capacity. There is no doubt that EFAC is truly representative of users in the Public Safety and Business/Industrial[3] Radio Service Pools.

B. EFAC Knows The Commission's Rules Regarding Frequency Coordination

There is no question that EFAC has intimate knowledge of the Commission's Rules regarding frequency coordination. For example, Alan Tilles was involved in the Commission's initial creation of today's frequency coordination rules on behalf of PCIA's predecessor, the National Association of Business and Educational Radio, Inc. ("NABER"). Mr. Tilles drafted NABER's comments in the proceeding, and developed a number of the Commission's Rules for frequency coordination in a variety of proceedings.[4]

In addition to crafting new rules and processes for frequency coordination, Mr. Tilles has spent countless hours educating users, and frequency advisory committees, on frequency coordination rules. Through presentations at trade association meetings (APCO, IACP, AAR, NABER/PCIA and others) and general industry meetings (IWCE, etc.), Mr. Tilles has provided an intense level of education concerning frequency coordination.

Similarly, Tusa and Blue Wing have worked on frequency coordination issues with a variety of licensees and provided user education on the Commission's Rules. For example, each entity has worked over the past ten years with dozens of 800 MHz Public Safety and Business/Industrial licensees, guiding them through the Commission and Transition Administrator's Rules regarding 800 MHz rebanding.

2010); PCIA, Inc. in WP Docket No. 07-100 (May 28, 2010); the City of Kansas City, Missouri, et. al. in WT Docket No. 02-55 (January 7, 2008); and Pyramid Communications, Inc. in WT Docket No. 10-4 (July 2, 2010).

[3] For purposes of this filing, "Business/Industrial" references are also intended to include Specialized Mobile Radio frequencies and licensees.

[4] *See*, for example, *Report and Order*, PR Docket No. 73-737, 60 RR 2d 41 (1986); *Report and Order*, PR Docket No. 85-273, 60 RR 2d 379 (1986); *Report and Order*, PR Docket No. 93-60, 73 RR 2d 1229 (1993); *Report and Order*, WT Docket No. 02-55, 33 CR 457 (2004).

C. EFAC Will Comply With The Commission's Policies Regarding Coordination

EFAC's members are well aware of the Commission's requirements for Frequency Advisory Committees. Consistent with those requirements, EFAC will (for example) be involved in post-licensing conflicts. In this regard, EFAC Member Shulman Rogers has been involved in dozens of post licensing conflicts, in each case working to resolve such cases to the satisfaction of all licensees.[5] Further, EFAC would expect to enter into a Memorandum of Understanding with the Commission regarding interference reporting.[6]

While EFAC was originally created to bring efficiencies to existing customers with engineering intensive application needs, EFAC is aware of its frequency advisory responsibility to ensure non-discrimination amongst all applicants. EFAC will ensure such non-discrimination in its coordination procedures, in addition to meeting the Commission's standards for speed-of-service.

As part of ensuring non-discrimination, EFAC will be establishing an Advisory Boards for Public Safety and Business/Industrial coordination procedures. These Boards will be similar to oversight committees which below-signed counsel helped create for NABER. Each Board will have the ability to set coordination procedures and standards for EFAC (except those established by the FCC or jointly with other coordinating committees), including pricing. The combined Advisory Boards will establish such procedures for issues of applicability to both

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[5] *See*, for example, *Township of West Orange, New Jersey*, DA 14-428, released March 31, 2014. In that case, a Petition for Reconsideration was filed after a modified license was granted to West Orange. However, the Frequency Advisory Committee through which the Petition was filed, nor the Petitioner, served a copy on West Orange. Four years after licensing, the Commission sought to recover the additional frequencies from West Orange, based upon the allegations of the Petition and West Orange's failure to file an Opposition (of which it was unaware). When West Orange and its chosen Frequency Advisory Committee became aware of the Petition and the Commission's proposed action, Shulman Rogers quickly worked to reach a settlement between the parties. This settlement could easily have been reached when the Petition was originally filed, but the failure to serve West Orange (or West Orange's FAC) resulted in huge costs to West Orange in what was a failure of the frequency coordination system.

[6] http://transition.fcc.gov/eb/interference/plmic.html.

services. However, similar to the NABER committees, Board members will not be able to participate in decisions in which the member has a direct interest.[7]

D. EFAC Will Utilize Commission Approved Coordination Processes

EFAC will utilize coordination processes to ensure appropriate interaction with the Commission and other Frequency Advisory Committees. Specifically, EFAC is already working with two existing frequency coordinators (both Public Safety and Business/Industrial) on arrangements to ensure distribution to other Frequency Advisory Committees (and the Commission) of applications and notices in compliance with procedures adopted by those Committees.

In addition, EFAC will work with other Frequency Advisory Committees, through the Land Mobile Communications Council ("LMCC"), the Public Safety Communications Council ("PSCC"), and/or the National Public Safety Telecommunications Council ("NPSTC") to improve the frequency coordination process. For example, Alan Tilles has worked with LMCC since 1984 to improve frequency coordination processes, and has had direct involvement in issues such as the recent "chart" developed by LMCC to coordinate mixed use systems in shared environments.[8]

E. EFAC Utilizes Cutting-Edge Coordination And Engineering Processes

As discussed above, EFAC's members utilize existing tools offered by consulting engineers and Frequency Advisory Committees. In addition, Tusa utilizes its own, proprietary software, EZ Spectrum.

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[7] EFAC notes that RACOM, a multi-state SMR network operator which serves a large public safety segment, has had similar committees for decades. http://www.hendonpub.com/resources/article_archive/results/details?id=2175.

[8] http://www.lmcc.org/wp-content/uploads/2013/06/LMCC_Adjacent-Channel-Contour-Table_Ex-Parte-Ltr_061412.pdf.

The most important characteristic of EZ Spectrum is that it ***mitigates risk***. With EZ Spectrum services, an organization knows right away whether it has the frequencies available to build an emergency radio communications system. There are times when organizations ***think*** they have the frequencies needed for a system, but those frequencies end up being next to worthless. This up-front analysis that EZ Spectrum provides is an invaluable first step for saving money and headaches in the long run.

EZ Spectrum was born of the need that Tusa recognized for a better, more automated, streamlined, error-free way to handle spectrum analysis. Manual analysis is extremely time consuming and fraught with human error. So Tusa developed a software tool and brought in highly educated, experienced personnel to handle frequency planning. As TCS refined EZ Spectrum and realized the advantages the system entails, they recognized the opportunity to make these frequency analysis services available to outside organizations.

The EZ Spectrum software works directly with the FCC's Universal Licensing System, which decreases the chances of input error. EZ Spectrum personnel have the experience and expertise to analyze, interpret and make recommendations based on the system analyses. The service is not just automation, but automation with expert interpretation and recommendations.

Frequency analysis and monitoring is a dynamic, ongoing, ever-changing process. It's not a one-time undertaking that can be handled at the initial planning stage and then forgotten. Systems are constantly growing, adding users and expanding service areas. Add to that other external challenges such as commercial development and high-rise construction that can obstruct radio signals in addition to other potential user-licensee applying for frequencies near those of existing systems. Clearly there is constant risk for outside interference to licensed radio systems/networks, degrading the effectiveness of an otherwise good radio system. With EZ

Spectrum's various spectrum monitoring services, organizations can turn over the task of guarding system integrity against interference to ever-vigilant experts.

Identification of spectrums available and optimum spectrum plan for building or upgrading a system. With the EZ Spectrum software and its team of spectrum experts, the company can find licensable frequencies that others don't even know exist.

While in an ideal world EZ Spectrum is used proactively at the planning stage, there are also emergency situations when EZ Spectrum services are needed to remedy immediate interference problems. Over time, systems tend to degrade as both competing external systems and internal users contribute to interference that renders the radio system less effective. When a system becomes unusable because of interference, EZ Spectrum can step in with interference-resolution recommendations.

EZ Watch is a subscription service that EZ Spectrum provides to monitor an owner's call sign(s) for possible co/adjacent channel applications that could negatively impact system performance. EZ Spectrum would notify the owner and, as an additional service, could provide a technical response to the FCC during the public comment period on the owner's behalf, whenever others apply for frequencies that may interfere. EZ-Watch would also alert the owner of FCC rule changes (via email) that could impact their licensed operations.

EZ-Renewal is an automatic service whereby EZ-Spectrum would monitor an owner's FCC license pool of call signs to renew them as needed and to remind the owner to respond to FCC inquiries in a timely manner, when presented. This is important if the owner is likely to have occasional changes in personnel responsible for radio system management (a situation with which the Commission is very familiar). Since these renewals are on a 10-year basis, it is easy for personnel changes to result in renewals otherwise slipping through the cracks.

EZ-Tower will be a service whereby EZ-Spectrum would monitor tower light operational status for owners and would initiate FAA NOTAM declarations (via electronic mail) when tower lights become inoperable and when services are restored. The Owner would be copied in all email notices sent to FAA.

In addition to frequency analysis, EZ Spectrum's software tools can be used to identify the most efficient and cost-effective tower sites.

- Cost savings/efficiency—the more efficient your frequency plan is, the more efficient your whole system is.
- Better functionality—a good frequency plan mitigates risk associated with *self-interference* as well as outside interference. This is especially important at the lower frequency bands (VHF and UHF), which don't have built-in FCC safeguards.
- Speed/reliability—EZ Spectrum can provide information more quickly and accurately than organizations can themselves.
- Compliance—EZ Spectrum stays on top of FCC rules so that system owners can be assured of compliance with current regulations, much like CPAs can be relied upon to keep up with IRS rules and regulations.

For their part, Blue Wing and Shulman Rogers are working with Digital Global Services ("DGS") to introduce to the land mobile radio industry a new, unique, and cost effective methodology to detect interference sources. With the increased crowding of available land mobile spectrum, and the increased interference being caused by adjacent channel broadband operations, interference awareness has become even more critical for land mobile radio licensees. DGS's SigBase 1000 presents the most effective methodology for detecting and identifying such interference.

SigBase 1000 combines comprehensive, broad spectrum data capture, with analytics and remote access, to efficiently monitor, manage and optimize spectrum assets. The SigBase 1000 automatically collects, processes and stores spectral data in real-time. Critical data points are distilled in milliseconds and stored automatically in an integrated database for rapid analysis.

Thus, using SigBase 1000, EFAC can take its encyclopedic knowledge of the Commission's frequency coordination rules, link that knowledge with licensing database analysis and cold engineering tools, and then combine that information with actual field measurements to find the optimal channel for applicant use or to detect sources of interference.[9]

Blue Wing and Shulman Rogers have been at the forefront of introducing DGS and its cutting-edge equipment to the industry, which is a critical part of helping to resolve post-licensing conflicts.

III. CONCLUSION

WHEREFORE, the premises considered, it is respectfully requested that the Commission designate the Engineers Frequency Advisory Committee, LLC as a certified Frequency Advisory Committee for Part 90 Public Safety and Business/Industrial Pool frequencies, consistent with the showings made herein.

Respectfully submitted,

ENGINEERS FREQUENCY ADVISORY COMMITTEE, LLC

By: Alan S. Tilles, Esquire

Its Attorney

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Date: November 4, 2014

[9] Indeed, the Commission found that such "field studies" were valuable when it adopted the original coordination rules. *Report and Order*, PR Docket No. 73-737, 60 RR 2d 41 (1986) at para. 68; *Memorandum Opinion and Order*, PR Docket No. 83-737, 61 RR 2d 148 (1986) at para. 27.